AN INVESTIGATION OF THE VALUE OF SUPERVISED DIET IN THE JUNIOR PRIMARY DEPARTMENT OF THE COCOA PUBLIC SCHOOL COCOA, FLORIDA

JOHNNIE LEY WALLER

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AN INVESTIGATION OF THE VALUE OF SUPERVISED DIET IN THE JUNIOR PRIMARY DEPARTMENT OF THE COCOA PUBLIC SCHOOL COCOA, FLORIDA

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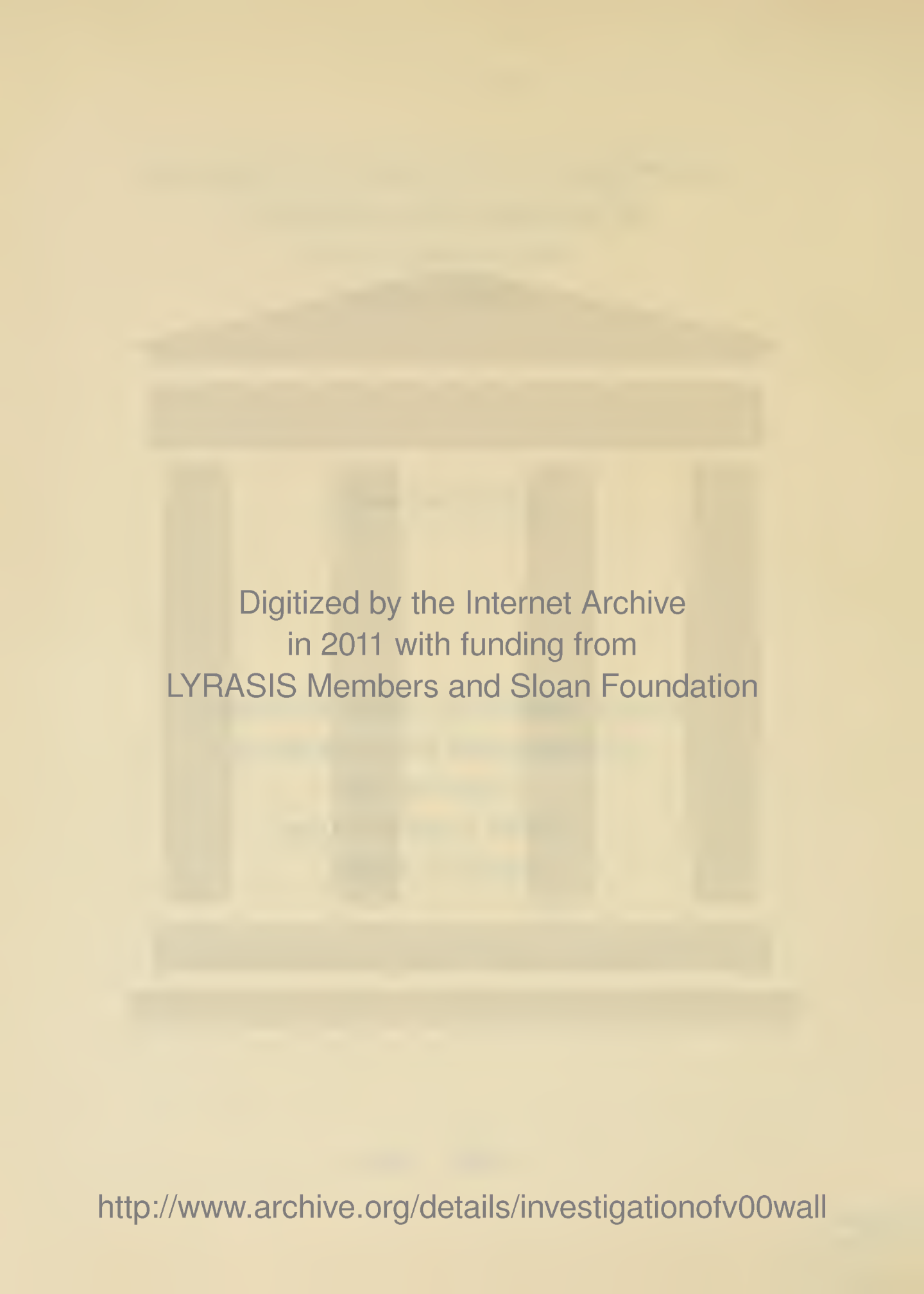

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FOREWORD

Each succeeding year brings new evidence that diet directly influences growth and general health of the individual. The purpose of this project is to help those who regard health as the most important phase of life, of the adult or the growing child. The author has endeavored to show how diet influences the general health, and in this attempt she has presented in detail the Lunch-room Project that was enacted in the Junior Primary Department of Public Schools, Cocoa, Florida.

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CHAPTER I

INTRODUCTION

Background of Cocoa, Florida. Cocoa is a town situated about half way between Jacksonville and Miami, on the East Coast of Florida. The population of permanent residents is 5,248. Cocoa is a tourist town, and it is estimated that fifteen hundred visitors spend the winter months in Cocoa. While many of these visitors are seeking Florida's climate and a period of relaxation and entertainment, others are in search of work in the citrus plants and other industries.

Within a radius of ten miles of Cocoa there are a number of small settlements: City Point, Sharpes, Merritt, Bon Aventure, Lotus, Georgiana, Indianola, and Tropics. These settlements are all either bordering the Indian River or the Banana River. Canaveral and Cocoa Beach are two other somewhat larger settlements and are located near the Atlantic Ocean about fifteen miles from Cocoa.

The Merritt Island section and the Peninsula (that section lying between Banana River and the Ocean) is often spoken of as the "Gold Coast of Florida." This region is so named for some of the finest fruit in the nation is produced in its citrus groves. The grove owners, generally,

are men of wealth, and their families live in comfortable circumstances. The day laborers on these groves are less fortunate in most instances. They and their families are usually satisfied if they have cars, places to sleep, and enough to eat. Too often they think of food in terms of quantity, with no thought of nutritional value. They usually lack educational and cultural backgrounds.

Truck farming provides labor for many men and their families on the rich land in the Cocoa area. Just as it is in the citrus industry, the owners of the truck farms, generally, provide adequately for their families. The unfortunate persons are the day laborers on the farms. They belong to the migrant class of workers who occasionally, or habitually, move with their families to seek, or engage in, seasonal employment.

The fishing industry has grown to such proportions in the Cocoa area that with each succeeding year more migrant workers are moving into the adjacent settlements bordering the rivers and ocean, seeking employment. Canaveral Harbor is one of the largest of these fishing villages. Many families here, and in other fishing settlements, have tents or makeshift huts for living quarters, while they are engaged in their fishing occupations.

Migrant workers refers to those who follow seasonal occupations. They have no permanent place of residence and are continually on the move seeking employment.

Jumbo type shrimp are abundant in this area. Millions of dollars annually are brought into the Brevard County section through the fishing industry alone. Eight large crab canning plants operate in the county. Approximately ten million pounds of fish are packed and shipped each year to northern markets. The working hours for the fishermen and their families are never ending during the season when the fish run, and every member of the family who can help at all is pressed into the service. Even the very young children can assist in the spreading of the nets for drying or throwing back into the water such fish too small or undesirable for marketing. In most cases the living conditions of the migrant fishermen and their families are below substandard, and their lack of interest in educational and cultural opportunities is almost unbelievable. They seem to be satisfied with life if food can be obtained in quantities, regardless of nutritional values.

It is estimated that there are from one to five million agricultural and industrial migrants in this country. This constitutes one of America's problems.

During seasonal employment shifts, migrants frequently find maintenance, of even a minimum standard of living, an impossibility.

Settlement I is located near the ocean in a barren section of the county. Salt air and white sand there make it an unlikely garden spot. This is a fishing settlement where whole families spend their time fishing, or packing fish and shrimp for shipment.

Through the influence of the Health-diet Project, which was instituted in the Cocoa School, conditions at Settlement I were changed. With combined efforts a small plot of ground was secured where vegetables for the families in this settlement were produced. Carrots, cabbage, tomatoes, squash, and beans were successfully grown. Children in these families had learned to enjoy vegetables regularly in the school lunch-room and were no longer satisfied with the plain fish and bread diet which had constituted their principal articles of food for most of their young lives.

Settlement II is located on a narrow strip of land between the Atlantic Ocean and Banana River. Families residing in this settlement are migrant grove workers. They live from day to day, doing what they can with the wages they earn. The wages would be adequate for two in the

family, but as there were usually several children, the younger ones required additional milk and other expensive necessities. The great concern in the family was the inadequate means for providing food and clothing. Undernourishment and vitamin deficiencies were rife. Poor selection of food, improper eating habits, and lack of knowledge of food values, were also contributing factors in malnutrition so prevalent in these families.

Settlement III is a community where thirty families were engaged in truck farming. In this particular location the soil is rich and black, and the vegetables are produced in abundance. The economic conditions prevailing in this settlement are not unlike those in Settlement II. Meals served to the families were considered adequate if food were served in quantities with little regard for quality of food and nutritive values.

When a community, through its teachers, becomes aroused by unbearable conditions, usually something is done about it. In the Cocoa area, the critical conditions among the children of the migrant families so aroused the public that something was done to definitely improve the health conditions of the school children of those families.

Through the concerted efforts of teachers and cooperating organizations the Cocoa School Lunch-room Project

achieved remarkable benefits which are recorded in this manuscript.

School plant. The school plant in Cocoa consists of two main buildings. These buildings will soon be replaced by new modern structures in practically the same location. The present buildings were erected thirty years ago and at that time were considered adequate for the needs of the communities which they served.

Today, however, even with additions to the buildings, the increase in population in this area has taxed the capacity of the present school plant and new school buildings are a real necessity.

One building is occupied by the junior and senior high school students. This building is a three story structure and antiquated in design and purpose.

The school lunch-room is located in this building. However, the lunch-room is one of the most recent additions to the building and is commodious and attractive. The lunch-room is described in another section of this manuscript.

The elementary school building is a two story structure, a little more modern in design than the high school building. This building accommodates the first

six grades. During the last summer vacation months the elementary building was redecorated. Each room was given a new coat of soft blue. This, and the new flourescent lighting system, made the rooms more attractive and provided adequate protection for the eyes of the students.

Arrangements have been made for the erection of four small buildings during the 1948 summer months. This will relieve the crowded conditions which now exist.

School lunch-room. The Cocoa school lunch-room is located on the first floor of the high school building. There are three sections, one for each school; the high school grades, one for the elementary department and one section for the junior primary groups.

The section used by the primary groups is furnished adequately for serving two hundred children at one time. The room is bright and cheerful. Walls are finished in a soft robins egg blue with ivory trim. Tables and benches are of the proper size to give space and comfort to little people. Standard sized dishes are used.

The room is equipped with sanitary tile floor. Immaculate cleanliness is the first consideration, next in order being convenience, attractiveness, and comfort.

The kitchen has everything that a modern school kitchen could desire. There are four metal steam tables

for keeping food at the right temperature for serving. Three large electric ranges, two water heaters, two large electric refrigerators, two electric dish-washing machines, and other necessary equipment have been provided.

CHAPTER II

THE PROBLEM

Statement of the problem. The faculty members of the elementary school of Cocoa began a program for improving health conditions of the students.

In the fall of the year 1947 the enrollment of the lower grades had increased over 30 per cent. Twenty-five new pupils entering the Cocoa School were "War Babies" of 1941 and the year following. These boys and girls were victims of circumstances and constituted a problem which demanded immediate attention. The first years of their lives had been spent in homes of abject surroundings and totally devoid of cultural background or educational advantages.

Many of these children came from the migrant families living in the settlements described in another section of this manuscript. One of the principle factors to be considered in the health program was diet, for a large number of the younger children appeared undernourished and undeveloped. It was the purpose of the Cocoa School faculty to provide a dietary program that would insure for each student the maximum benefits from the school lunch-room.

Purpose of the investigation. The purpose of this study was to determine the procedures for enriching the

health program through the established lunch-room project.

Limitations of investigation. For the sake of expediency the School Lunch-room Project, inaugurated September, 1947, and continued through June, 1948, was for the immediate consideration and benefit of the primary children who were in such a poor state of malnutrition.

A year seems a short period of time but it was long enough to prove its validity. The investigation was limited to the Junior Primary Department since it was evident that many of these children were undernourished, and more children in this department were found to be suffering from malnutrition than in the other grades. They had come from the three settlements described in the introductory chapter of this project. These children had never had the benefits to be derived from the school lunch-room in former years. Many came from families having no older children attending school; consequently they knew only the food prepared by uneducated and inexperienced persons. Some families had older children who had carried home valuable information and good reports on the lunches of former years.

This study has been primarily concerned with twenty-five children who were under the author's direct supervision from September, 1947, through June, 1948.

It is expected that the Cocoa School will continue

the nutritional program and each succeeding year will prove beneficial to all students who participate.

Procedure. When school began in the fall of 1947 and the teachers became alarmed over the apparent conditions of such a large number of primary students, they began to make plans for a thorough investigation.

As Primary Supervisor, the writer called a meeting of the primary teachers. Arrangements were made for each teacher to contact certain persons or organizations and solicit their aid in the lunch-room program which the teachers proposed to inaugurate.

Plans were made to visit parents of the children involved in the investigation. As soon as the plans were completed, the actual school lunch-room program was launched. Cooperation of groups in the community was attained, arrangements were made for physical examinations, special dietary study and follow-up study was made for selected cases.

DEFINITIONS

Allergy. A condition of unusual or exaggerated specific susceptibility to a substance which is harmless in similar amounts for the majority of members of the same species. This term embraces all types of human hypersensitiveness.[1]

Assistants. Members of the home economics classes under the direction of the supervisor. Those persons who assist in the preparation and serving of the Cocoa School lunches.

Balanced lunch. A lunch that contains one third or more caloric content of the whole day's recommended amount. For children from six to eight years of age the daily allowances for calories should be approximately from fourteen to seventeen hundred.

Calorie. A unit of heat, being the amount of heat required to raise one gram of water one degree centigrade.[2]

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[1] W. A. Newman Dorland, The American Illustrated Medical Dictionary, p. 74.

[2] Ibid., p. 259.

Dietition. Dorland says a dietition is "one who is skilled in the scientific use of diet in disease."[3]

Health. Health is considered that condition, both mental and physical, in which the individual is functionally well adjusted internally as concerns all body parts and externally as concerns his environment.[4]

Homogenized milk. Milk that has been so treated as to render it a product of uniform quality throughout.

Malnutrition. Bogert says that malnutrition is "a state in which either the food intake is inadequate in some respect to meet the body needs, or in which physiological and environmental conditions are such that the body is unable to utilize sufficient food materials to provide for its proper growth, maintenance, and repair."[5]

Muscular dystrophy. Progressive atrophy of the muscles with no discoverable lesion of the spinal cord.[6]

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[3] W. A. Newman Dorland, The American Illustrated Medical Dictionary, p. 432.

[4] E. A. Voltmer and A. A. Esslinger, The Organization and Administration of Physical Education, p. 150.

[5] L. Jean Bogert, Nutrition and Physical Fitness, p. 428.

[6] Dorland, op. cit., p. 446.

Pasteurized milk. Named for Louis Pasteur the French scientist who originated the process of pasteurization. This process consisted of the instantaneous exposure of the milk to a temperature of 157 degrees Fahrenheit or a more or less prolonged exposure to a lower temperature, for instance, for twenty minutes to 157 degrees Fahrenheit, or thirty minutes to 145 degrees Fahrenheit.[7]

School lunch-room. The school lunch-room is that place in the school where specially prepared, well-balanced, wholesome food is served to the students and teachers at the lowest price consistant with the cost of operation of the lunch-room.

Vitamins. A general term for a number of unrelated organic substances that occur in many foods in small amounts and that are necessary for the metabolic functioning of the body.[8]

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[7] J. W. Harris and E. L. Speer, Everyday Foods, pp. 19-29.

[8] Dorland, op. cit., p. 1621.

CHAPTER III

ATTACK OF THE PROBLEM

After plans were made for inauguration of the lunchroom program in the Cocoa School, teachers in the Junior Primary Department began to function with wholehearted enthusiasm.

Through the cooperation of the school health physician and nurse, 150 primary children were weighed and measured. Fifty of that number showed symptoms of malnutrition. Either inadequate intake of food or environmental conditions which prevented sufficient utilization of food were found to be the chief causes of malnutrition. Since the effect of the body in general was the same, malnutrition could usually be detected by the appearance of the child. It was for this reason that Bogert's criterion for malnutrition, as shown in Table I, proved of inestimable value in this project.

Twenty students were found to be in need of immediate attention and were selected for special study. These children were given weekly examinations by the physician and nurse. Parents of this selected group were visited and informed of the results of the examinations. Parents were convinced that the children were in need of special attention and that well-balanced meals were necessary. By the end of the second month

of school these children had shown gains in weight and had improved in all school activities.

TABLE I

COMPARISON OF CHARACTERISTICS OF GOOD NUTRITION AND MALNUTRITION*

Item	Good Nutrition	Malnutrition
1. Body	Well developed	Undersized, poorly developed, presence of physical defects
2. Weight	About average for height	Unusually thin, but may be normal, overweight
3. Muscles	Well developed, firm	Small and flabby
4. Skin	Turgid and healthy color	Loose, pale, waxy, or sallow
5. Subcutaneous fat	Good layer	Usually lacking
6. Mucous membrane	Reddish pink	Pale
7. Hair	Smooth and glossy	Often rough and without luster
8. Eyes	Clear and without dark circles under	Dark hollows or blue circles under

TABLE I (continued)

COMPARISON OF CHARACTERISTICS OF GOOD NUTRITION AND MALNUTRITION*

9.	Facial expression	Alert but without strain	Drawn, worried, old, animated but with strain
10.	Posture	Good, head erect, chest up, shoulders flat, abdomen in	Fatigue posture, head thrust forward, chest flat and narrow rounded shoulders, abdomen protruding
11.	Disposition	Good-natured and full of life	Irritable, overactive, listless
12.	Sleep	Sound and restful	Difficult to get to sleep, restless
13.	Digestion and elimination	Good	Subject to nervous indigestion
14.	General health	Excellent	Lacks endurance

*Bogert, Jean, Nutrition and Physical Fitness, 3rd edition, p. 536.

Cooperating organizations were most helpful and responded to all demands made upon them by the sponsors of the program. Men's civic organizations contributed sufficient funds to care for lunches for ten children. More financial aid was offered than was necessary for continued operation of the program. The entire community was aroused to the general health conditions existing among the malnutritional group and wholeheartedly cooperated in the program inaugurated by the teachers.

The teachers assumed the responsibility of visiting parents of children in her class. These were made each month and parents were furnished with diet charts which were used in cases where special foods were recommended by the school physician. Menus and recipes were given to the parents by the teachers when visits were made each month.

Teachers accompanied their classes to the lunch-room each day, sat with them, and engaged the children in pleasant conversation, which was an aid to digestion and happiness.

Children in the elementary grades made attractive posters for the lunch-room showing the values of different foods. They also placed appropriate decorations on the walls as the season suggested.

The dietition prepared menus and recipes which were used each day in the lunch-room. She supervised all food that was served to the children and prepared special dishes

for the special cases described in the Appendix to this manuscript.

The success of the lunch-room program was largely due to the splendid cooperation of all individuals and groups participating in its operation through the entire school year.

CHAPTER IV

COOPERATING ORGANIZATIONS

School administrators. It was the role of the entire group of supervisors, principals, and department leaders to assist in the health-diet project as to procedure, aims, and achievement.

This group contacted parents on occasions that demanded their attention concerning character traits and discipline problems in isolated cases. There were several difficult situations related to behavior habits that were definitely improved after the children involved had improved physically through the school lunch program.

In addition to contacting parents, the school officials provided audio-visual-aid materials for the primary classes. On alternate Fridays health pictures were shown on the screen. Special film-strips, illustrating adequate school lunches, nutritious fruits and vegetables, were prepared and projected on the screen throughout the school.

Under the direction of the principal, the older students in the school made free-hand drawings of fruits and vegetables and then duplicated in film-strips for class appreciation.

As consultants the administrators were of inestimable

assistance. They participated in the arrangements for special medical and dental examinations and numerous operative cases.

Faculty members and assistants. At the beginning of the school year in September of 1947 there were various tests to be given to all students upon their entrance into their respective classes. Many of these tests were administered by the teachers. The first tests given were the series of aptitude and readiness given to the Primary children and given by the Primary teachers.

The Primary teachers assumed the responsibility of measuring the children for height, weight, and vision.

These preliminary examinations served as a guide in the first steps of the organization of the health-diet project in the Cocoa School.

The children who made low scores in the readiness tests and those whose weights were found to be below established normal weights for their ages and heights were given immediate attention. The children who had defective vision were the first to receive special examinations by the school physician.

Records of tests were made and filed in the clinic rooms for the convenience of the school physician and nurse.

These records provided important information and facilitated the work of the physician who made his initial visit and examinations during the first two weeks of school.

Thorough examinations made by the school physician revealed that between thirty and forty primary children were suffering from malnutrition. Teachers, realizing the seriousness of the situation, determined to do everything possible to help the children to overcome those deficiencies due to malnutrition.

Each teacher made personal visits into the homes of the children under her supervision. The parents were informed of the results of the school physician's examination and were tactfully urged to cooperate in the nutritional program at school. Teachers took advantage of the opportunity to explain to the parents the value of the well-balanced meals so important to the general health and learning abilities of the growing children. Many of the migrant workers and young war bride mothers had never heard of vitamins, calories, or the variety of foods constituting well-balanced lunches.

The role of the teachers in the nutritional program was probably the most important of any. They were with the students throughout the day and it was their responsibility to visit among the parents after school hours.

Through years of personal contact with parents and

students, the primary teachers in the Cocoa School were aware of the problems which the health-diet project involved and were ably equipped to handle them. Their eagerness to attain improved health conditions and scholastic achievement in the students was demonstrated by their unswerving efforts in participation in the organized project.

Each teacher daily accompanied her students to the school lunch-room, sat with them, ate with them, and maintained a wholesome atmosphere through pleasant conversation and desirable table manners. Students were encouraged to eat all that was served on their trays. They were happy to follow the example set by teachers, in eating all vegetables, and drinking the milk served to them.

Teachers were especially helpful in assisting parents to secure menus and charts for planning and preparing more nutritious meals in their homes than they had formerly served.

The role of the teacher in achieving the desired outcomes through the program was exacting but equitably demonstrated.

Role of the Parent-Teacher Association. The Parent-Teacher Association under the leadership of the president, Mrs. T. A. Canty, cooperated enthusiastically with the school and other organizations in the achievement of the health-

diet project in the Cocoa School.

According to plans, a membership drive was launched, with the result that parents of children in the Primary Department joined the association 100 per cent. This outcome of the membership drive represents genuine interest and cooperation of the association in the welfare of the school.

Soon after the beginning of the school term in the fall of 1947 and after the annual membership drive had been accomplished, other activities of significance followed. One of these was a reception at the school. All parents and friends of the school were urged to attend. Many accepted the invitation to the reception and expressed personal interest in the proposed health project.

During the evening the school lunch-room was open to visitors. Refreshments were served there and the dietition was present to give first-hand information concerning the lunch-room program and its nutritional benefits.

The dietition appeared on the program in a talk explaining the importance of the well-balanced lunches served in the lunch-room each day. It was easy for parents to cooperate in the health-diet program after they had become convinced of the validity of the program.

The Parent-Teacher Association continued through the year in relentless cooperation in the achievement of the

nutritional program in the Junior Primary School.

The association paid for lunches for six children during the entire year. Mothers of the underprivileged children were invited to visit the school lunch-room once each week to observe as the lunches were prepared and served. The response was gratifying.

The president and her representatives made regular visits to the school and offered any assistance desired for the children.

Role of the welfare bureau. The Welfare Chairman assumed a very important role in the achievement of the health-diet project in the school at Cocoa, Florida. She called on parents in seventy different homes. These homes were often in communities not easily accessible to the ordinary motorist. Many of these homes are occupied by the migrant fishermen and their families. As a rule this type of person is little concerned with the highest quality of food and nutritive value of meals served in the home. Quantity rather than quality holds the attention in providing food for the family.

The Welfare worker accomplished a worth-while purpose in carrying health education into homes and through her personal contact soliciting and attaining cooperation of parents.

From the migrant fishermen's families came the children often found to be suffering from malnutrition and its ill effects. The Welfare Chairman was instrumental in improvement of conditions in the homes of these migrant workers and securing the family interest in the health-diet project in the school.

The case histories of Frances, Ralph, and Andy recorded in the manuscript describe the work achieved through the efforts of the Welfare Bureau.

Role of school lunch-room manager and assistants. The manager of the school lunch-room and her assistants were hostesses to the children during the lunch hour. Each day when the children arrived in the lunch-room they found the tables attractively set and palatable, nutritious food on their trays. There was always a well-balanced lunch of the proper proportion for each child. A second serving was available if desired.

The food was of first quality, well prepared, well cooked and tempting. Each lunch was arranged with attention to color, aroma, and attractive appearance.

When practical, flowers to add color were placed on each table for the pleasure of the children. The lunch-room was a place conducive to general happiness, which in turn aids in the normal function of the digestive organs.

Role of the school physician. Two weeks after the beginning of the school term in the fall, a thorough examination was given each child. The children in the Junior Primary Department were the first to be examined because they had not had the advantage of the school examinations last year, since they were not in school at that time.

One half of the children in the Primary Department were found to be victims of malnutrition in some degree.

While malnutrition is not confined to the poorer families, it was found more prevalent among the children of migrant families who were either ignorant of dietetics or not sufficiently interested in eating habits and food preparation.

Four of these children were found to be in serious conditions which could be traced directly or indirectly to negligence. Teachers had been concerned about these four since they were listless and bored with the routine of the school activities. Not until they were stripped of all clothing and examinations were made by the school physician could their true conditions be known. Those examinations showed symptoms and bone deformatives of rickets.

Two children were found to be suffering from diabetes. Special diets were prescribed for these six cases and special lunches were prepared for them in the lunch-room.

By the end of school all six cases had shown great improvement, through medical treatment and nutritious lunches.

Role of the specialist in dietetics. The dietition assumed the responsibility of the service in the school lunchroom. She supervised the purchase of all foods served, with particular attention to the meats, fruits, and vegetables.

When possible fresh green vegetables or quick frozen varieties were obtained. Only Grade-A meats were purchased. Pasteurized and homogenized milk were served daily with the school lunches. Desserts consisted mainly of fresh fruits, frozen fresh fruits, and custards containing milk and eggs.

The dietition supervised all school kitchen activities and maintenance of the new equipment in both dining room and kitchen.

As supervisor of the Home Economics Department, the dietition instructed the students in that department in the preparation of charts and menus to be given to the parents of children living in the settlements described in this manuscript. These charts, menus, and also recipes were available to all parents for home use.

Through the influence of the school dietition the entire group of high school students became interested in the health project and enlisted the interest and support of their parents and friends. Through their cooperation in the project,

several special cases received financial aid. One spastic was sent to a children's hospital for treatment. Two tonsillectomies were performed gratis by local physicians.

No one person who participated in the health-diet project in the Cocoa School was more enthusiastic in the enlistment of community cooperation, and financial assistance, than the specialist in dietetics.

The menus planned by the dietition were the result of serious consideration for the different groups of children. Several children who were allergic to certain types of foods were served substitute foods agreeable to them.

The author has included a table of menus that were planned and prepared under the supervision of the dietition. (See Appendix A)

CHAPTER V

FOLLOW-UP CASES

The record of the twenty children who were selected for further study is shown in Table II. It will be noted that when school began in September, ten of the selected group of children were below the normal weight for children with corresponding heights and chronological ages. In June after nine months' participation in the lunch-room program, the children were weighed again and Table II shows that they had made an average gain of five and three fifths pounds.

It will also be noted that ten of the cases recorded in Table II were children with obese symptoms. When these children were weighed and measured in September, they showed an average overweight of five and one tenth pounds. In June this group were weighed just before school closed for the summer, and Table II shows an average loss of four and one fifth pounds.

Investigation revealed that children in the two groups had not had the advantages of well-balanced meals in their homes. Not enough vegetables and fruits and too much candy and sweets were responsible for much of the trouble.

Through the lunch-room program the children had

acquired tastes for vegetables and fruits served in the school lunch-room lunches and had learned to observe desirable table manners and rules of the school lunch-room. These children have shown so much progress under the supervised diet project that they will receive continued supervision during the vacation months while school is not in session.

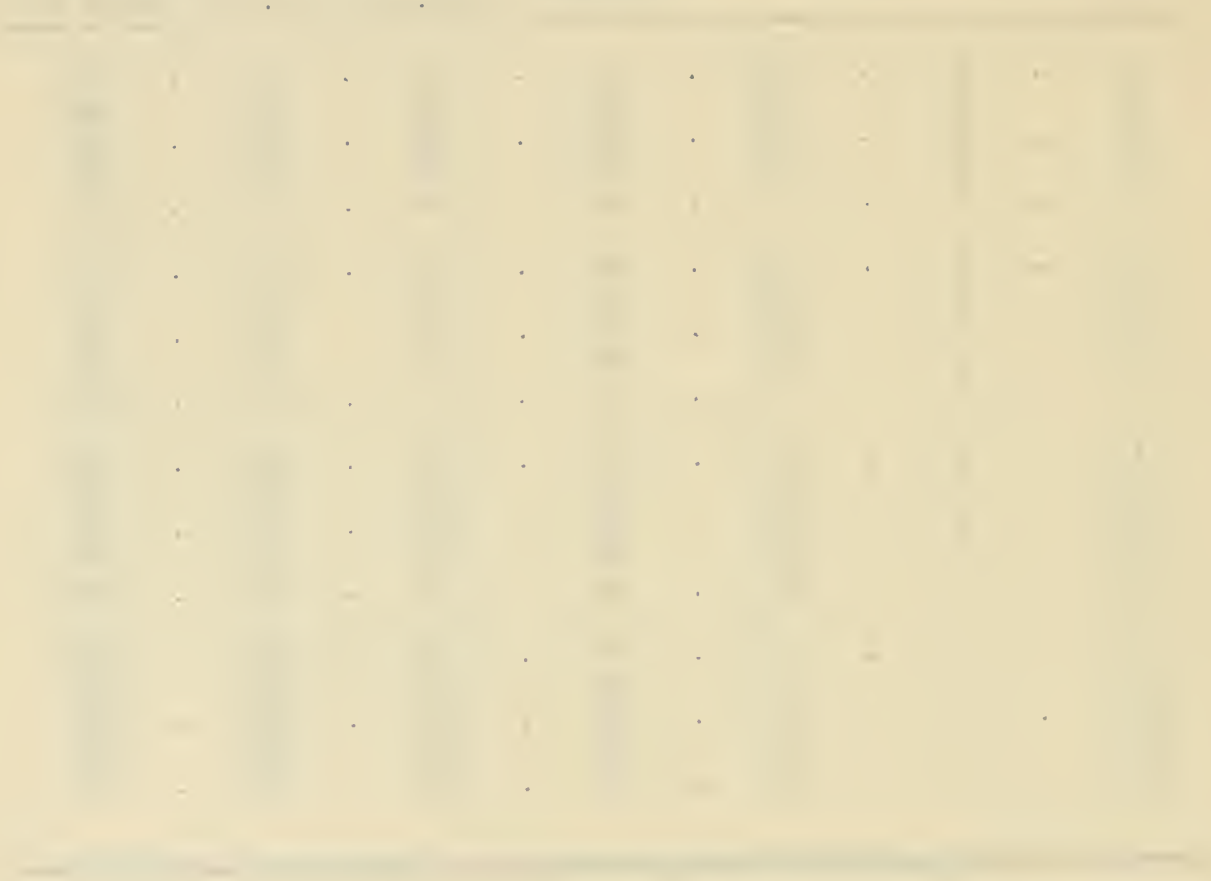
The county health nurse will make regular visits in the homes and advise the parents concerning necessary medical attention. Two of these cases will receive tonsillectomies during the summer through contributions from one of the civic organizations in the city.

The school dietition has prepared special diet menus for cases represented in Table II. These have been sent to parents who will prepare the food according to directions and systematically serve them. The dietition will check upon the cases to see that her directions have been followed consistently.

TABLE II

COMPARATIVE DATA OF FOLLOW-UP CASES

Case	Age	Height	Normal Weight	Actual Weights		
				Sept.'47	Feb.'48	June '48
1	6	46	48	40	45	47
2	6	46	48	42	45	48
3	6	46	48	42	44	47
4	6	48	52	47	50	51
5	6	48	52	46	50	51
6	6	44	42	40	42	43
7	6	45	45	39	42	44
8	6	45	45	40	42	48
9	6	47	50	47	50	50
10	6	47	50	40	45	50
11	6	47	50	65	58	52
12	7	48	50	60	55	52
13	7	48	50	55	53	50
14	7	49	54	55	55	53
15	7	49	54	55	54	54
16	7	49	54	59	55	55
17	7	50	56	60	56	56
18	7	50	56	60	56	56
19	7	51	61	65	63	63
20	7	52	63	65	66	66



Specialized diet cases. The children selected for specialized diet cases were classified into six different categories as shown in Table III.

Each of these children was under the care of family physician or specialist. Diet was not the only factor to be considered in these cases although it commanded its share of attention.

TABLE III

SPECIALIZED DIET CASES

Case	Defect	No.
1	Undulant fever	2
2	Rheumatic fever	3
3	Asthmatic	3
4	Muscular dystrophy	1
5	Post-operative cases	5
6	Foreign war orphan	1

Case I--Undulant fever. There were two children who had been ill for a long period of time and could not attend school regularly. When they were permitted to return to school by their family physicians, they were put on a strict diet which consisted of more fruits and vegetables than were served on the regular lunches and no milk or rich desserts. These children were restricted in their physical activities and needed less in the energy foods.

Case 2--Rheumatic fever cases. Three children were victims of rheumatic fever and were served several small amounts of food during the day. On account of weakened heart conditions they were restricted in the amount rather than the variety of food served.

Case 3--Asthmatic subjects. Three of the children in the school were asthmatic subjects. All three were allergic to certain types of food. Two could not drink milk and one could not take eggs or chocolate.

Case 4--Muscular dystrophy. A child of six had been under the care of a specialist since she was three years of age. She was allowed to attend school if certain dietary rules were followed to the letter. The dietition supervised her lunches with meticulous care, and there were no unpleasant reactions due to food prepared for her.

Case 5--Post-operative cases. During the year three children in the selected group had tonsillectomies and three appendectomies who required special attention given to the preparation of their lunches. For several weeks soft foods and fruit juices comprised their daily lunches. Ovaltine was added to the milk served these cases.

Case 6--Foreign war orphan. This was a child who had been adopted into a family and brought to America by an American Army officer. This little girl was unaccustomed to American food, and it was not an easy task for her to learn to eat many of the things she had never seen before. Her new mother explained that almost every thing served on the lunches was strange to her except the Irish potato. The first few weeks of school this child would not taste any food on her plate except the potato she knew so well.

All of the above mentioned cases were given the attention necessary for them to make the best possible adjustments to existing conditions.

CHAPTER VI

CASE HISTORIES

The following cases have been selected for special follow-up study. In all cases the names used are fictitious.

Jones. This particular family has seen some very tragic times. There are nine children in the group, six of which are in school. The father had not always been able to provide the necessities of life. In his line of work, daily wages hardly took care of clothing for the family.

For a while the children brought lunches from their home. Pride stood in the way of the parents asking for help through the school or welfare agencies. Soon, however, the teachers became aware of the economic home conditions of the family and tactfully invited the children to try eating their lunches in the school lunch-room. The children did not know that they were listed as underprivileged children. After having their lunches in the school lunch-room for several weeks, the parents as well as the teachers saw the benefits derived from the well-balanced lunches served the children.

The children in this group gained in weight and demonstrated a marked degree of improvement in all phases of their school activities and social adjustment.

Simmons. In the Simmons family there were two boys who entered the Cocoa School in September, 1947. Both boys were so shy they would not open their lunches in the presence of the other boys in their class. They were just as unwilling to take part in class discussions. The teacher of this class bent every effort to get some response from them. Naturally the boys were not making much progress in their school work.

Secretly, the teacher on several occasions opened their lunches that they had brought from home. These lunches revealed an important point from which the teacher began to work. She invited the boys to eat with her in the school lunch-room. Their first lunch there was a very pleasant surprise to them. They had never seen or eaten such tempting food. It was not difficult to persuade the parents that it was more practical to let the boys eat regularly in the school lunch-room. By the end of the school year these boys had gained in weight and in achievement tests scored above average.

Frances (falls under classification 3 above). Probably no child in the Cocoa School, who was selected for special treatment, responded so well as Frances. Frances has been in the school for three years and has suffered frequent asthmatic attacks. Each year it was impossible for her to attend school regularly on account of illness. At the

beginning of the school year, in the fall of 1947, the school physician made X-Rays in an effort to see what could be done. Malnutrition was found to be one of the contributing causes of Frances' condition. Upon the advice of the school physician and nurse, in consultation with teachers and dietitian, it was decided to try a highly specialized lunch. Milk and other articles of food to which Frances was allergic were not served her, but with substitutes, her lunches were well-balanced and tempting.

Records show that Frances gained twelve pounds during the last eight months of the school year and did not lose one day at school after November 5, 1947.

In addition to her improved health condition, Frances also showed advancement in all school activities.

Ralph. Ralph came to school in September at the age of six. One would have thought he was scarcely four. He was quite unkempt in appearance and socially not as advanced as most three year old children. He scarcely knew day from night for he was often out all night with his family while they were fishing. He had not had the opportunity to play with many children of his age, and the family diet consisted mainly of fish, shrimp, and bread.

Soon after school began in the fall, the County Nurse visited the family and persuaded them to let Ralph eat his

lunches in the school lunch-room. Ralph was victim of malnutrition and undeveloped physically and mentally. From the first month after eating in the school lunch-room Ralph's progress was remarkable. He gained in weight consistently and his readiness for formal school routine was noticeably improved. At the close of the school term Ralph had advanced to Level Three in his ability to read and do other types of school work.

The family became health conscious and were appreciative of the improved conditions of Ralph, both physically and socially. With continued well-balanced meals, Ralph should eventually be brought up to normalcy.

Andy. This child began school in September, 1947. He was thin, pale, and undernourished when he enrolled in the class for beginners. He lived with his grandmother who was deaf and in poor health. She had wondered why Andy was so listless and quiet most of the time. Not until Andy started to school did the grandmother discover that he was almost totally deaf. The physician at the school gave Andy a thorough examination, and diagnosed his case as malnutrition as well as having impaired hearing.

Andy was given special treatment by the school physician and specially prepared lunches in the school lunch-room. At the end of the school year Andy had improved

to the extent that he looked almost like a new boy. He was active and happy; his hearing had greatly improved; and that tired, listless attitude had disappeared.

The cases described show what can be done when individuals and organizations put forth the necessary effort. Wholehearted participation in a project for improving the health of the underprivileged group achieves desired and lasting results.

CHAPTER VII

CONCLUSION

Exigencies of the war had imposed increasing responsibilities upon the families living in the settlements where conditions were already deplorable.

When World War II began, many young men in the community joined the armed forces and were sent to training centers. It is estimated that at least 150 young men from the three settlements, described in this investigation, married during the first two years of the war. The children resulting from the marriages accentuated the existing problem.

While the school children were the ones with whom we were directly concerned in the school lunch-room project, it is worth noting that the families and the community are certainly reaping some real benefits.

Crisp[1] says, "Proper diet, fresh air, sunshine, rest, elimination of wastes, and avoidance of alcohol, tobacco and drugs are very important in maintaining a healthy nervous system. Upon these depend successful adjustment to daily living."

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[1] Crisp, K. B., Be Healthy. New York: The J. B. Lippincott Co., 1938, p. 281.

The aim of the Cocoa School in conducting the diet-health program, which the author has described in the foregoing pages, was to attain certain standards of health for the school membership and to provide for the individual student a well-balanced lunch which is an integral part of the diet routine.

A source of great satisfaction to those participating in the program was the outcome of its operating forces. Probably the most gratifying attainments were seen in the students who showed consistent gains in weight, improvement in general health, social adjustment, and educational advancement.

The plan, so successfully achieved in the Cocoa, Florida, Primary School should meet the needs of classroom teachers, supervisors, lunch-room managers, and others who may be concerned with malnutritional problems in their individual schools.

The cooperating organizations and individuals participating in the program expressed eagerness to continue as active supporters and sponsors of the school health project.

Specific results accruing from this project can be stated as follows:

1. With the lunch-room under the expert direction of the Dietician, Mrs. Isabel Adamson, the operating expenses

were less and the food was well-balanced and much more tempting than in previous years. Seldom was there any food left upon the plates. The children enjoyed the food and enjoyed eating together.

2. The children were taught table manners. They learned to be quiet while eating, and not to eat too rapidly. Many things which some of the children never had at home were provided for them in the lunch-room.

3. Parents were saved the trouble of preparing lunches and what could be had in the lunch-room for 25 cents could not have been prepared for so little at home.

4. Our lunch-room project proved an educational experience for many parents.

Parents consulted the dietitian often in an honest effort to improve the preparation of food in the home in order to obtain the most nourishing meals with the amount of money available for them.

They learned the importance of the well-balanced meals, with less meat and more vegetables; and that each child should have a daily supply of milk equal to one quart. They learned that this could be served as a beverage and also could be used in preparing tempting custards and other desserts.

Many of these families had been accustomed to serving

the plainest of foods and few vegetables, green salads, or milk desserts were included in the daily diet.

The school lunch program was projecting itself into the homes and make-shift tents of the migrant workers in the fishing settlements. Mothers sought help from the dietitian in preparing well-balanced meals and securing recipes for many things which were served in the school lunch-room, which gave evidence of their desire to gain information. Through this procedure the parents received invaluable instruction in preparing and serving tempting nutritious meals to their families.

Housewives who had never known anything about the importance of nutrition and vitamin sufficiency were at last awakened to the seriousness of undernourishment and vitamin deficiencies and made a study of foods and the happy, busy students who bore scarce resemblance of their former selves. The tired, listless, expressions had disappeared from their faces.

One school year seemed a short period of time, but it was long enough to prove the validity of the health-diet project in the Cocoa School.

Children who for years had existed upon irregular meals, prepared with no thought of balance or nutritional value, were thriving upon lunches that were bringing them

up to normalcy.

5. In many instances parents took an interest in the community life and came to realize their responsibility to school and community that offered so much to them.

6. Parents were appreciative of the improved conditions of the students, both in health and academic achievement. Their satisfaction was expressed in their determination to assist in the expansion of the lunch-room program. Parents also became more nutrition-conscious; to the extent that they solicited assistance from the dietitian who gave many recipes and menu charts to them. These were used by mothers in serving more tempting and wholesome meals to the family at home.

7. Civic clubs pledged financial aid and cooperation in a determined effort to assure the continuation and expansion of the school lunch-room program.

8. Teachers were gratified with the improvement in the total class-room activities program. The achievement tests administered at regular intervals showed that a selected group of students who had vitamin-added lunches, scored several points higher on each test.

Let the reader understand that different foods are served certain children who need extra vitamins of various types. As an example of this: six children with eyes affected by some disorder were served foods with extra Vitamin

A added. Milk, orange juice, and carrots were included regularly in daily lunches for these children.

9. The entire community became concerned with the health program that was initiated in the school, primarily to care for the undernourished.

10. The County Health Physician and the County Health Nurse have examined three hundred school children and sent reports of their examinations to the parents. Most of the children who needed medical attention have received it.

11. Welfare workers, ministers, and teachers visited in the homes, and interested the families in the health of the community in general, and the school in particular.

It must be understood that malnutrition is a disease with a clear-cut history, cardinal symptoms, a definite course, and a recognized method of treatment. This clinical entity is of special interest to the teacher and mother since they can play a most important part in the treatment and cure.

After a thorough examination, and diagnosis is made by the physician, and treatment prescribed, the cooperation of others is necessary. Meals must be properly prepared. They must not only contain the proper amount of vitamins and minerals but the person or persons for whom the meals were prepared, must consume the food.

Poverty and other economic conditions may be predisposing factors in malnutrition. However, the lack of

food of sufficient nutritive value is always responsible for its incidence. Refusal to eat the right kind and the right amount, of food often is the main factor in malnutrition.

Malnutrition among the migrant families in the settlements adjacent to Cocoa was generally due to ignorance, and lack of understanding in buying, preparing, and serving the proper foods. When the families were convinced that the school health-diet project had been the main contributing factor in improved health conditions in their children, they recognized the validity of the program. For continued improvement in health conditions they were eager to observe, in the home, some of the dietary rules they had learned.

Conditions which existed in all three settlements were greatly improved through the influence of the Welfare Chairman, who was particularly well adapted to her position. The school lunch-room project sponsors were fortunate in having Mrs. Livermore as one of the cooperating agencies in achieving the aims of the project. Mrs. Livermore personally visited in each home in all three of the settlements described in this manuscript and gained their confidence and enlisted their cooperation in the Cocoa School lunch-room project.

School children from these settlements began to improve in health, having participated in the lunch-room program for less than a month. At the end of the school

year their symptoms of malnutrition were fast disappearing and the project had become an indispensable influence in the health of the community.

From the primary group, undernourished, inactive and unhappy children, there developed a group of healthy, happy, busy students who bore scarce resemblance of their former selves. The tired, listless expressions had disappeared from their faces.

One school year seemed a short period of time but it was long enough to prove the validity of the health-diet project in the Cocoa School.

Children who for years had existed upon irregular meals, prepared with no thought of balance or nutritional value, were thriving upon lunches that were bringing them up to normalcy.

The women in these families were not alone in the awakening. The men were convinced that what the mothers had learned through the school project was something which should concern the whole family. Consequently, gardens were planted in nearly every available spot in some areas.

Teachers and school administrators received letters of appreciation from many parents whose children benefited from the school lunch-room project.

The author includes one letter of especial interest

to those who participated in the Cocoa School diet-health program. It should be an incentive to members of other communities who need to inaugurate a similar program. The letter follows:

_____ Florida
March __ 1948

Dear _____:

Please let me thank you and your teachers for the many kindnesses to my son.

My mother is writing this for me because I cannot see. I have been blind for ten years. I have never seen my little boy, but he is a wonderful little boy.

He never was real well and strong before he started to school. He probably did not have the right kind of food. I know he had too much candy and I could not see what he was eating at meal times. But now he is much heavier and feels well all the time. He tells us each day what he has for lunch and says school spinach is better than home spinach. My mother has learned to fix it up now like he has it at school with crisp bacon and boiled eggs.

I am so happy because my little boy is happy and he is learning to read. I wish I could see his little face; he seems so gay. All those sores on his legs and face are gone. The county nurse says it's because he has had such wholesome lunches at school.

Other mothers who come to visit with me say such nice things about the school lunch-room too. We all appreciate everything the school is doing for our children.

Thank you very much for everything.

Mrs. _____

Through the evidence gathered in the investigation of Cocoa, Florida, School, it is believed that the instigation of such a program in other schools in this area would

be beneficial.

It is to be expected that families who have experienced greatly improved health conditions through improved diet, will assiduously follow dietary rules that will assure continued growth and improvement.

The only proof of the validity of any program is the evaluation of its outcomes. The chart found in this manuscript indicates that the operation of the nutritional program achieved desirable outcomes and that through it the children involved have consistently gained in weight, learning abilities, and social adjustment.

Parental education as well as economic conditions seemed important and were considered seriously in the Cocoa School Project.

At least twenty future American citizens, who may otherwise never have attained normal wholesome adulthood, have been started on the road to health and happiness.

It is expected that the children in the Cocoa School will continue to make consistent progress under the organized school lunch-room program.

APPENDIX A

MENUS FOR ONE MONTH, (TWENTY DAYS)

Scalloped potatoes
Carrot and raisin salad
Rolls and butter
Fruit jello and milk

Ham croquettes, apple sauce
Buttered toast
Celery tips
Cake and orange sauce
Milk

Roast beef, potato chips
Stewed tomatoes on toast
Peach cobbler
Milk

Corned beef hash, biscuits
Carrots and peas
Apricots, cookies
Milk

Ice cream available to student who eats all of lunch served on tray.

Ham and green beans
Corn bread and butter
Tomato salad
Apple roll and sauce
Milk

Chicken and rice
Carrot salad
Green peas
Buttered rolls
Baked apple

Baked hash and peas
Combination salad
Biscuits and butter
Cake and orange sauce
Milk

Creamed chipped beef
Buttered toast
Beets
Rice pudding
Milk

Second serving of vegetables and milk for student who calls for same.

Meat loaf and peas
Mashed potatoes
Celery strips, carrots
Chocolate cake
Milk

Salmon patties, tomato sauce
Carrot strips
Buttered rolls
Fruit jello
Milk

Meat loaf, potatoes, brown gravy
Spinach, sliced egg
Corn bread, butter
Pears and cookies
Milk

Salmon loaf
Steamed rice
Carrot salad, saltines
Cherry cobbler
Milk

Fresh vegetables or quick frozen foods used when available.

Vegetable-beef stew
Muffin and butter
Banana custard
Cookies and milk

Spanish rice
Buttered toast
Fruit salad
Milk

Potato salad and ham
Biscuits and butter
Apple sauce
Milk

Mashed potatoes and cheese sauce
Buttered rolls
Asparagus tips
Ambrosia and cookies
Milk

On cold rainy days hot soups are substituted for meat dishes and hot chocolate instead of cold milk.

Meat loaf, potatoes, brown gravy
Green peas
Buttered rolls
Cake and orange sauce
Milk

Chicken and rice
Carrot and raisin salad
Biscuits and butter
Baked apple
Milk

Ham croquettes, apple sauce
Combination salad
Buttered toast
Fruit jello and milk

Corned beef hash, biscuits
Steamed rice
Carrots and peas
Banana custard
Milk

Substitute foods are provided for any child requiring a special diet.

APPENDIX B

NUTRITIONAL AIDS

RULES FOR USE OF SUGAR

1. Keep the total amount of sugar in the diet low and do not take much of it in concentrated forms such as candy.

2. Limit candy and other concentrated sweets to a small amount taken at the end of a meal. Hard candies, sweet chocolate, nuts, and dried fruits are the best confections.

3. Take most of the sugar intake in more dilute forms such as fresh fruits, and sweetening in beverages, and bland foods such as cereals, cake, pudding, etc. Reserve sweets for the end of the meal (desserts) as much as possible.

4. Avoid sweets between meals but, if candy is taken on an empty stomach, drink at least one glass of water as soon as possible.

RULES FOR USE OF STARCHES

1. Try not to eat more than two foods rich in starch at any one meal. If overweight, cut down on the amount of starchy food eaten. Eat less of bread and potatoes, especially bread.

2. Avoid eating hot breads, hot bread, or cake which is insufficiently baked. If baked until interior is dry and crumbly, they are not objectionable.

3. Avoid eating starchy foods which have been fried in such a way as to absorb the cooking fat.

4. Take moderate amounts of simple cakes, pastries and puddings, and very small portions, if any, of those which contain larger amounts of sugar and fats.

5. Eat some of the whole grain foods in order to avoid a diet with too little fibre or residue.

6. Accompany starchy foods in the menu with milk, fruit, or vegetables as much as possible.

RULES FOR REGULAR DAILY LUNCHES

1. Each lunch equal to one third of daily requirement in caloric value.

2. One small serving of GRADE-A meat.

3. About one third quart of milk.

4. Two vegetables if possible to obtain.

5. Fruit served in some form.

6. Starchy foods equal to three fifths of total caloric requirement.

7. Pure water, cool, but not ice cold.

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